INDEX TO AUTHORS.

A

Aldrich, Martha, and **Bledsoe, Mary Sue.** Studies in the metabolism of the bile. I. A quantitative Pettenkofer test applicable to the determination of bile acids in the blood, 519

Alles, Gordon A. See COHN, MINOT, ALLES, and SALTER, 325

Anderson, Edmund G. E. See BUNKER and ANDERSON, 473

Anderson, Hilding C. See MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER, 413

Ariyama, Noboru. The formation of methylglyoxal from hexose phosphate in the presence of tissues, 395

—. Studies on glyoxals, 359

B

Beber, M. See MORGULIS and BEBER, 115

Becker, J. Ernestine. See MCCOLLUM, RASK, and BECKER, 753

Bischoff, Fritz, Blatherwick, N. R., and **Sahyun, Melville.** Concerning the similarity of glukhorment and synthalin, 467

Blatherwick, N. R. See BISCHOFF, BLATHERWICK, and SAHYUN, 467

—. See SAHYUN and BLATHERWICK, 459

Bledsoe, Mary Sue. See ALDRICH and BLEDSOE, 519

Bloor, W. R. The determination of small amounts of lipid in blood plasma, 53

Bollman, Jesse L. See WILHELMJ and BOLLMAN, 127

Bollman, V. L. See MORGULIS, 627

Brown, H. I. See MORGULIS, 627

Bunker, John W. M., and **Anderson, Edmund G. E.** Polarized light and starch hydrolysis, 473

Burr, George O. See EVANS and BURR, 231

C

Calvery, H. O. Some chemical investigations of embryonic metabolism. I. The isolation of four pentose nucleotides from chicken embryos, 489

—. II. The isolation of a hexose nucleic acid from chicken embryos, 497

Chambers, William H., and **Milhorat, Adolph T.** Muscular exercise and nitrogen metabolism of dogs, 603

—. See MILHORAT and CHAMBERS, 595

Clark, E. P. Studies on gossypol. III. The oxidation of gossypol, 81

Cohn, Edwin J., Minot, George R., Alles, Gordon A., and **Salter, William T.** The nature of the material in liver effective in pernicious anemia. II, 325

Conklin, Claire. See MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER, 413

Connor, Charles L. Studies on lipochromes. III. The quantitative estimation of carotin in blood and tissues, 619

D

Diack, Samuel L., and **Lewis, Howard B.** Studies in the synthesis of hippuric acid in the animal organism. VII. A comparison of the rate of elimination of hippuric acid after the ingestion of sodium benzoate, benzyl alcohol, and benzyl esters of succinic acid, 89

Doisy, Edward A. See LEVY and DOISY, 733

E

Ellis, Ruth H. See ROSE, ELLIS, and HELMING, 171

Elvehjem, C. A. See HART, STEENBOCK, WADDELL, and ELVEHJEM, 797

Elvehjem, C. A. See WADDELL, ELVEHJEM, STEENBOCK, and HART, 777

—. See WADDELL, STEENBOCK, ELVEHJEM, and HART, 769

Evans, Herbert M. The effects of inadequate vitamin A on the sexual physiology of the female, 651

— and **Burr, George O.** A new differentiation between the antineuritic vitamin B and the purely growth-promoting vitamin B, 231

F

Folin, Otto. A new blood sugar method, 421

G

Gallup, Willis D. The value of iron salts in counteracting the toxic effects of gossypol, 437

Geddes, W. F., and **Hunter, Andrew.** Observations upon the enzyme asparaginase, 197

Greenwald, Isidor. The chemistry of Jaffe's reaction for creatinine. IV. A compound of creatinine, picric acid, and sodium hydroxide, 539

H

Haller, H. L. See LEVENE and HALLER, 555

Harnes, Alvin R. The colorimetric determination of lipoid phosphorus in blood, 405

Hart, E. B., Steenbock, H., Waddell, J., and **Elvehjem, C. A.** Iron in nutrition. VII. Copper as a supplement to iron for hemoglobin building in the rat, 797
—. See WADDELL, ELVEHJEM, STEENBOCK, and HART, 777
—. See WADDELL, STEENBOCK, ELVEHJEM, and HART, 769
Hawes, Effie Ross. See STADIE and HAWES, 241
—. See STADIE and HAWES, 265
Helming, Oscar C. See ROSE, ELLIS, and HELMING, 171
Herrick, Horace T., and **May, Orville E.** The production of gluconic acid by the *Penicillium luteum-purpurogenum* group. II. Some optimal conditions for acid formation, 185
Hogan, Albert G., Hunter, Jesse E., and **Kempster, Harry L.** Acceleration of growth rates by dietary modifications, 431
Hunter, Andrew. See GEDDES and HUNTER, 197
Hunter, Jesse E. See HOGAN, HUNTER, and KEMPSTER, 431

I

Irving, Laurence, and **Wells, Phillip H.** The occurrence of labile phosphorus in various kinds of muscles, 97

K

Kempster, Harry L. See HOGAN, HUNTER, and KEMPSTER, 431
Kiech, Veon Carter, and **Luck, James Murray.** The estimation of urea and amino acid nitrogen in animal tissues, 723
Kramer, Benjamin. See SHELLING, KRAMER, and ORENT, 157

L

Levene, P. A., and **Haller, H. L.** Configurational relationships of 2-hydroxyvaleric and lactic acids, 555
— and **Walti, A.** Studies in polymerization and condensation. II. Products of interreaction of potassium acetate and epichlorohydrin, 685
— and **Wolfrom, M. L.** Lactone formation of cellobionic and of glucoarabonic acids and its bearing on the structure of cellobiose, 671
Levy, Milton, and **Doisy, Edward A.** The effect of borate on the oxidation of glucose and other sugars, 733
Lewis, Howard B. See DIACK and LEWIS, 89
Long, C. N. H. The effect of anesthesia on the recovery process in mammalian skeletal muscles, 563
Luck, James Murray. The estimation of amino acid nitrogen in animal tissues, 1
—. The metabolism of amino acids, 13
—, **Morrison, Gordon,** and **Wilbur, Leonard Fisk.** The effect of insulin on the amino acid content of blood, 151
—. See KIECH and LUCK, 723

M

Mason, Eleanor D. See REDFIELD and MASON, 451

May, Orville E. See HERRICK and MAY, 185

McClendon, J. F., Anderson, Hilding C., Steggerda, F. R., Conklin, Claire, and **Whitaker, Mildred.** A simple respiration apparatus for determination of oxygen and carbon dioxide in indirect calorimetry, 413

McCollum, E. V., Rask, O. S., and **Becker, J. Ernestine.** A study of the possible rôle of aluminum compounds in animal and plant physiology, 753

Meeker, George H., and **Reinhold, John G.** Titrimetric quinhydrone electrodes. A comparison with the hydrogen electrode for hydrion concentration determinations in plasma, whole blood, and other biological fluids, 505

Milhorat, Adolph T., and **Chambers, William H.** The effect of insulin on protein metabolism, 595

—. See CHAMBERS and MILHORAT, 603

Minot, George R. See COHN, MINOT, ALLES, and SALTER, 325

Morgulis, Sergius. Sulfur metabolism and partition of sulfur in the urine of fasting dogs, 627

— and **Beber, M.** Studies on the effect of temperature on the catalase reaction. VI. Heat inactivation of catalase at different hydrogen ion concentrations, 115

Morgulis, Sergius, and **Perley, Anne.** A note on the Kramer-Tisdall potassium method, 647

Morrison, Gordon. See LUCK, MORRISON, and WILBUR, 151

Myers, Victor C., and **Wardell, Emma L.** The influence of the ingestion of methyl xanthines on the excretion of uric acid, 697

O

Orent, Elsa R. See SHELLING, KRAMER, and ORENT, 157

P

Palmer, Leroy S. See SWEETMAN and PALMER, 33

Perley, Anne. See MORGULIS and PERLEY, 647

Q

Quick, Armand J. Quantitative studies of β-oxidation. I. The conjugation of benzoic acid and phenylacetic acid formed as the end-products from the oxidation of phenyl-substituted aliphatic acids, 581

R

Rask, O. S. See MCCOLLUM, RASK, and BECKER, 753

Redfield, Alfred C., and **Mason, Eleanor D.** The respiratory proteins of the blood. III. The acid-combining capacity and the dibasic amino acid content of the hemocyanin of *Limulus polyphemus*, 451

Reed, C. I. On the state of plasma calcium in parathyroidectomized dogs, 547

Reinhold, John G. See MEEKER and REINHOLD, 505

Riising, Blanche M. See HART, STEENBOCK, WADDELL, and ELVEHJEM, 797

Rose, William C., Ellis, Ruth H., and **Helming, Oscar C.** The transformation of creatine into creatinine by the male and female human organism, 171

S

Sahyun, Melville, and **Blatherwick, N. R.** Effect of intraperitoneal injections of insulin upon the blood sugar of well fed rabbits, 459

—. See BISCHOFF, BLATHERWICK, and SAHYUN, 467

St. John, J. L. Growth on a synthetic ration containing small amounts of sodium, 27

Salter, William T. See COHN, MINOT, ALLES, and SALTER, 325

Shelling, David H., Kramer, Benjamin, and **Orent, Elsa R.** Studies upon calcification *in vitro*. III. Inorganic factors determining calcification, 157

Stadie, William C. Studies on the oxygen-, acid-, and base-combining properties of blood. V. Extension of the Debye-Hückel theory of ionic interaction to hemoglobin, bicarbonate-sodium chloride systems, 303

— and **Hawes, Effie Ross.** Studies on the oxygen-, acid-, and base-combining properties of blood. III. The validity of hydrogen ion activity determinations by the hydrogen electrode in systems containing carbonic acid, carbonates, hemoglobin, carbon monoxide hemoglobin, and methemoglobin, 241

— and —. IV. The apparent first dissociation constant, pK_1', of carbonic acid and the activity coefficient of the bicarbonate ion in solutions of hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin at varying ionic strengths, 265

Steenbock, H. See HART, STEENBOCK, WADDELL, and ELVEHJEM, 797

—. See WADDELL, ELVEHJEM, STEENBOCK, and HART, 777

—. See WADDELL, STEENBOCK, ELVEHJEM, and HART, 769

Steggerda, F. R. See MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER, 413

Sweetman, Marion Deyoe, and **Palmer, Leroy S.** Insects as test animals in vitamin research. I. Vitamin requirements of the flour beetle, *Tribolium confusum* Duval, 33

T

Theis, Edwin R. The lipid distribution in normal and abnormal liver tissues. II. The effect of insulin on the lipids of rabbit liver, 75

V

Van Donk, Evelyn. See HART, STEENBOCK, WADDELL, and ELVEHJEM, 797

W

Waddell, J., Elvehjem, C. A., Steenbock, H., and **Hart, E. B.** Iron in nutrition. VI. Iron salts and iron-containing ash extracts in the correction of anemia, 777

—, **Steenbock, H., Elvehjem, C. A.,** and **Hart, E. B.** Iron in nutrition. V. The availability of the rat for studies in anemia, 769

—. See HART, STEENBOCK, WADDELL, and ELVEHJEM, 797

Walti, A. See LEVENE and WALTI, 685

Wardell, Emma L. See MYERS and WARDELL, 697

Wells, Phillip H. See IRVING and WELLS, 97

Whitaker, Mildred. See MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER, 413

White, F. D. Reducing substances in the blood of the dogfish, *Squalus sucklii*, and certain other fishes, 655

Wilbur, Leonard Fisk. See LUCK, MORRISON, and WILBUR, 151

Wilhelmj, Charles M., and **Bollman, Jesse L.** The specific dynamic action and nitrogen elimination following intravenous administration of various amino acids, 127

Wolfrom, M. L. See LEVENE and WOLFROM, 671

Wong, San Yin. Colorimetric determination of iron and hemoglobin in blood. II, 409

INDEX TO SUBJECTS.

A

Acid(s):
Bile, blood, Pettenkofer quantitative determination (ALDRICH and BLEDSOE) 519
-combining capacity of hemocyanin of *Limulus polyphemus* (REDFIELD and MASON) 451
— properties of blood. III. (STADIE and HAWES) 241
— — — — —. IV (STADIE and HAWES) 265
— — — — —. V (STADIE) 303

Activity:
Coefficient of bicarbonate ion in hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin solutions at varying ionic strengths (STADIE and HAWES) 265

Aliphatic acid(s):
Phenyl-substituted, conjugation of benzoic acid formed as end-product of oxidation (QUICK) 581
—, — — phenylacetic acid formed as end-product of oxidation (QUICK) 581

Aluminum:
Compounds, animal and plant physiology (MCCOLLUM, RASK, and BECKER) 753

Amino acid(s):
Blood, insulin effect (LUCK, MORRISON, and WILBUR) 151
Dibasic, hemocyanin of *Limulus polyphemus* (REDFIELD and MASON) 451
Metabolism (LUCK) 13
Nitrogen, animal tissues, estimation (KIECH and LUCK) 723
—, — —, — (LUCK) 1
— elimination following intravenous administration (WILHELMJ and BOLLMAN) 127
Specific dynamic action following intravenous administration (WILHELMJ and BOLLMAN) 127

Anemia:
Iron salts for correction (WADDELL, ELVEHJEM, STEENBOCK, and HART) 777
Iron-containing ash extracts for correction

Anemia—*continued:*
(Waddell, Elvehjem, Steenbock, and Hart) 777
Pernicious, liver. II (Cohn, Minot, Alles, and Salter) 325
Rat availability for studies (Waddell, Steenbock, Elvehjem, and Hart) 769
Anesthesia:
Muscle, mammalian skeletal, recovery process in, effect (Long) 563
Animal:
Physiology, aluminum compounds (McCollum, Rask, and Becker) 753
Tissue, amino acid nitrogen estimation (Kiech and Luck) 723
—, — — — estimation (Luck) 1
—, urea estimation (Kiech and Luck) 723
Apparatus:
Respiration, carbon dioxide determination in indirect calorimetry (McClendon, Anderson, Steggerda, Conklin, and Whitaker) 413
—, oxygen determination in indirect calorimetry (McClendon, Anderson, Steggerda, Conklin, and Whitaker) 413
Ash:
Iron-containing extracts, anemia correction (Waddell, Elvehjem, Steenbock, and Hart) 777
Asparaginase:
(Geddes and Hunter) 197

B

Base:
-combining properties of blood. III (Stadie and Hawes) 241
— — — —. IV (Stadie and Hawes) 265
— — — —. V (Stadie) 303
Benzoic acid:
Conjugation, formed as end-product from oxidation of phenyl-substituted aliphatic acids (Quick) 581
Benzyl alcohol:
Hippuric acid elimination after ingestion (Diack and Lewis) 89
Bicarbonate:
Ion, activity coefficient in hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin solutions at varying ionic strengths (Stadie and Hawes) 265
-sodium chloride, hemoglobin systems, Debye-Hückel theory of ionic interaction (Stadie) 303
Bile:
Acids in blood, Pettenkofer quantitative determination (Aldrich and Bledsoe) 519
Metabolism. I (Aldrich and Bledsoe) 519
Biology:
Titrimetric quinhydrone and hydrogen electrodes,

Biology—*continued:*
comparison in hydrion concentration determinations in biological fluids (MEEKER and REINHOLD) 505
Blood:
Amino acid content, insulin effect (LUCK, MORRISON, and WILBUR) 151
Bile acids, Pettenkofer quantitative determination (ALDRICH and BLEDSOE) 519
Carotin, quantitative estimation (CONNOR) 619
Colorimetric determination of hemoglobin. II (WONG) 409
— — — iron. II (WONG) 409
— — — lipoid phosphorus (HARNES) 405
Hemoglobin, colorimetric determination. II (WONG) 409
Iron, colorimetric determination. II (WONG) 409
Lipoid phosphorus, colorimetric determination (HARNES) 405
Oxygen-combining properties. III (STADIE and HAWES) 241
— —. IV (STADIE and HAWES) 265
— —. V (STADIE) 303
Plasma, lipid, determination of small amounts (BLOOR) 53
Protein, respiratory. III (REDFIELD and MASON) 451
Blood—*continued:*
Reducing substances, fish (WHITE) 655
Respiratory protein. III (REDFIELD and MASON) 451
Sugar, insulin intraperitoneally injected, effect (SAHYUN and BLATHERWICK) 459
— method (FOLIN) 421
Titrimetric quinhydrone and hydrogen electrodes, comparison in hydrion concentration determinations (MEEKER and REINHOLD) 505
Borate:
Oxidation of glucose, effect (LEVY and DOISY) 733
— — sugars, effect (LEVY and DOISY) 733

C

Calcification:
In vitro. III (SHELLING, KRAMER, and ORENT) 157
Inorganic factors determining (SHELLING, KRAMER, and ORENT) 157
Calcium:
Plasma, parathyroidectomized dogs (REED) 547
Calorimetry:
Carbon dioxide determination, respiration apparatus (MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER) 413
Oxygen determination, respiration apparatus (MCCLENDON, ANDERSON,

Calorimetry—*continued:*
STEGGERDA, CONKLIN, and WHITAKER) 413

Carbon dioxide:
Respiration apparatus for determination in indirect calorimetry (MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER) 413

Carbon monoxide:
Hemoglobin, hydrogen ion activity determinations by hydrogen electrode in systems containing (STADIE and HAWES) 241

Carbonate(s):
Hydrogen ion activity determinations by hydrogen electrode in systems containing (STADIE and HAWES) 241

Carbonic acid:
Dissociation constant, first, in hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin solutions at varying ionic strengths (STADIE and HAWES) 265
Hydrogen ion activity determinations by hydrogen electrode in systems containing (STADIE and HAWES) 241

Carotin:
Blood, quantitative estimation (CONNOR) 619
Tissues, quantitative estimation (CONNOR) 619

Catalase:
Heat inactivation at different hydrogen ion concentrations (MORGULIS and BEBER) 115
Temperature effect on reaction. VI (MORGULIS and BEBER) 115

Cellobionic acid:
Lactone formation of, bearing on cellobiose structure (LEVENE and WOLFROM) 671

Cellobiose:
Lactone formation of cellobionic acid, bearing on structure (LEVENE and WOLFROM) 671
— — — glucoarabonic acid, bearing on structure (LEVENE and WOLFROM) 671

Colorimetry:
Blood, iron. II (WONG) 409
—, lipoid phosphorus (HARNES) 405
Hemoglobin in blood. II (WONG) 409
Iron in blood. II (WONG) 409
Lipoid phosphorus in blood (HARNES) 405

Constant:
Dissociation, apparent first, of carbonic acid in hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin at varying ionic strengths (STADIE and HAWES) 265

Copper:
Iron supplement in hemoglobin building (HART, STEENBOCK, WADDELL, and ELVEHJEM) 797

Creatine:
Creatinine, transformation by human male and female (Rose, Ellis, and Helming) 171
Creatinine:
Compound of picric acid, sodium hydroxide, and (Greenwald) 539
Creatine transformation by human male and female (Rose, Ellis, and Helming) 171
Jaffe's reaction, chemistry. IV (Greenwald) 539
Cyanhemoglobin:
Solutions at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (Stadie and Hawes) 265

D

Debye-Hückel theory:
Ionic interaction, extension to hemoglobin, bicarbonate-sodium chloride systems (Stadie) 303
Diet:
Growth acceleration by (Hogan, Hunter, and Kempster) 431
— on synthetic, containing small amounts of sodium (St. John) 27
Synthetic, containing small amounts of sodium, growth on (St. John) 27
Dissociation:
Constant, apparent first, of carbonic acid in hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin solutions at varying ionic strength (Stadie and Hawes) 265

E

Electrode:
Hydrogen, hydrogen ion activity determinations by, in systems containing carbonic acid, carbonates, hemoglobin, carbon monoxide hemoglobin, and methemoglobin (Stadie and Hawes) 241
—, titrimetric quinhydrone, comparison for hydrion concentration determinations in biological fluids (Meeker and Reinhold) 505
Quinhydrone, titrimetric (Meeker and Reinhold) 505
—, —, hydrogen electrode, comparison for hydrion concentration determinations in biological fluids (Meeker and Reinhold) 505
Embryo:
Chicken, hexose nucleic acid (Calvery) 497
—, pentose nucleotides (Calvery) 489
Hexose nucleic acid from chicken (Calvery) 497

Embryo—*continued:*
Metabolism. I (CALVERY) 489
—. II (CALVERY) 497
Pentose nucleotides from chicken (CALVERY) 489
Enzyme:
Asparaginase (GEDDES and HUNTER) 197
Epichlorohydrin:
Potassium acetate, products of interreaction (LEVENE and WALTI) 685
Ester(s):
Benzyl, succinic acid, hippuric acid elimination after ingestion (DIACK and LEWIS) 89
Excretion:
Hippuric acid, comparison of rate after ingestion of sodium benzoate, benzyl alcohol, and benzyl esters of succinic acid (DIACK and LEWIS) 89
Nitrogen, following amino acids administered intravenously (WILHELMJ and BOLLMAN) 127
Uric acid, methyl xanthine influence (MYERS and WARDELL) 697
Exercise:
Muscle, and nitrogen metabolism (CHAMBERS and MILHORAT) 603

F

Fasting:
Sulfur metabolism in urine of dogs (MORGULIS) 627
Fasting—*continued:*
Sulfur partition in urine of dogs (MORGULIS) 627
Urine, sulfur metabolism (MORGULIS) 627
—, — partition (MORGULIS) 627
Fat:
See also Lipid, Lipoid.
Fish:
Blood, reducing substances (WHITE) 655
Flour:
Beetle (*Tribolium confusum* Duval), vitamin requirements (SWEETMAN and PALMER) 33

G

Glucoarabonic acid:
Lactone formation of, bearing on cellobiose structure (LEVENE and WOLFROM) 671
Gluconic acid:
Penicillium luteum-purpurogenum group, optimal conditions for formation (HERRICK and MAY) 185
Production by *Penicillium luteum-purpurogenum* group. II (HERRICK and MAY) 185
Glucose:
Oxidation, borate effect (LEVY and DOISY) 733
Glukhorment:
Synthalin, similarity (BISCHOFF, BLATHERWICK, and SAHYUN) 467
Glyoxals:
(ARIYAMA) 359

Gossypol:
III (CLARK) 81
Iron salts in counteracting toxic effect (GALLUP) 437
Oxidation (CLARK) 81
Toxic effects, iron salts in counteracting (GALLUP) 437
Growth:
Dietary modifications for acceleration (HOGAN, HUNTER, and KEMPSTER) 431
-promoting vitamin B, differentiation from antineuritic (EVANS and BURR) 231
Synthetic ration containing small amounts of sodium (ST. JOHN) 27

H

Heat:
Catalase inactivation at different hydrogen ion concentrations (MORGULIS and BEBER) 115
Hemocyanin:
Acid-combining capacity, *Limulus polyphemus* (REDFIELD and MASON) 451
Amino acid, dibasic, *Limulus polyphemus* (REDFIELD and MASON) 451
Hemoglobin:
Bicarbonate-sodium chloride systems, Debye-Hückel theory of ionic interaction, extension to (STADIE) 303
Hemoglobin—*continued:*
Blood, colorimetric determination. II (WONG) 409
Colorimetric determination in blood. II (WONG) 409
Copper as iron supplement in building (HART, STEENBOCK, WADDELL, and ELVEHJEM) 797
Hydrogen ion activity determinations by hydrogen electrode in systems containing (STADIE and HAWES) 241
Nitric oxide, solutions at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265
Solutions at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265
Hexose:
Nucleic acid, chicken embryo (CALVERY) 497
Phosphate, methylglyoxal formation from, in presence of tissues (ARIYAMA) 395
Hippuric acid:
Elimination, comparison of rate after ingestion of sodium benzoate, benzyl alcohol, and benzyl esters of succinic acid (DIACK and LEWIS) 89

Hippuric acid—*continued:*
Synthesis in animal organism. VII (DIACK and LEWIS) 89

Hydrogen:
Electrode, hydrogen ion activity determinations by, in systems containing carbonic acid, carbonates, hemoglobin, carbon monoxide hemoglobin, and methemoglobin (STADIE and HAWES) 241
—, titrimetric quinhydrone electrodes, comparison for hydrion concentration determinations in biological fluids (MEEKER and REINHOLD) 505
Ion activity determinations by hydrogen electrode in systems containing carbonic acid, carbonates, hemoglobin, carbon monoxide hemoglobin, and methemoglobin (STADIE and HAWES) 241
— concentration determinations, titrimetric quinhydrone and hydrogen electrodes, comparison in biological fluids (MEEKER and REINHOLD) 505
— —, heat inactivation of catalase at different (MORGULIS and BEBER) 115

Hydrolysis:
Starch, and polarized light (BUNKER and ANDERSON) 473

2-Hydroxyvaleric acid:
Lactic acid, configurational relationships (LEVENE and HALLER) 555

I

In vitro:
Calcification. III (SHELLING, KRAMER, and ORENT) 157

Inorganic:
Factors determining calcification (SHELLING, KRAMER, and ORENT) 157

Insect:
Vitamin research. I (SWEETMAN and PALMER) 33

Insulin:
Amino acid content of blood, effect (LUCK, MORRISON, and WILBUR) 151
Blood sugar, intraperitoneal injections, effect (SAHYUN and BLATHERWICK) 459
Lipids of rabbit liver, effect (THEIS) 75
Metabolism, protein (MILHORAT and CHAMBERS) 595
Protein metabolism (MILHORAT and CHAMBERS) 595

Ion:
Bicarbonate, activity coefficient in hemoglobin, methemoglobin, cyanhemoglobin, and nitric oxide hemoglobin solutions at varying ionic strengths (STADIE and HAWES) 265

Ion—*continued:*
Debye-Hückel theory of ionic interaction, extension to hemoglobin, bicarbonate-sodium chloride systems (STADIE) 303
Hemoglobin solutions of varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion in (STADIE and HAWES) 265
Hydrogen, activity determinations by hydrogen electrode in systems containing carbonic acid, carbonates, hemoglobin, carbon monoxide hemoglobin, and methemoglobin (STADIE and HAWES) 241
—, concentration determinations, titrimetric quinhydrone and hydrogen electrodes, comparison in biological fluids (MEEKER and REINHOLD) 505
—, —, heat inactivation of catalase at different (MORGULIS and BEBER) 115

Iron:
Blood, colorimetric determination. II (WONG) 409
Colorimetric determination in blood. II (WONG) 409
-containing ash extracts, anemia correction (WADDELL, ELVEHJEM, STEENBOCK, and HART) 777

Iron—*continued:*
Copper supplement in hemoglobin building (HART, STEENBOCK, WADDELL, and ELVEHJEM) 797
Nutrition. V (WADDELL, STEENBOCK, ELVEHJEM, and HART) 769
—. VI (WADDELL, ELVEHJEM, STEENBOCK, and HART) 777
—. VII (HART, STEENBOCK, WADDELL, and ELVEHJEM) 797
Salts, anemia correction (WADDELL, ELVEHJEM, STEENBOCK, and HART) 777
—, toxic effect of gossypol counteracted by (GALLUP) 437

J

Jaffe:
Creatinine, chemistry of reaction. IV (GREENWALD) 539

K

Kramer-Tisdall:
Potassium method (MORGULIS and PERLEY) 647

L

Lactic acid:
2-Hydroxyvaleric acid, configurational relationships (LEVENE and HALLER) 555

Lactone:
Cellobionic acid, formation, bearing on cellobiose structure (LEVENE and WOLFROM) 671

Lactone—*continued:*
Glucoarabonic acid, formation, bearing on cellobiose structure (LEVENE and WOLFROM) 671
Light:
Polarized, and starch hydrolysis (BUNKER and ANDERSON) 473
Limulus polyphemus:
Acid-combining capacity of hemocyanin (REDFIELD and MASON) 451
Amino acid, dibasic, content of hemocyanin (REDFIELD and MASON) 451
Hemocyanin, acid-combining capacity (REDFIELD and MASON) 451
—, amino acid, dibasic (REDFIELD and MASON) 451
Lipid:
Blood plasma, determination of small amounts (BLOOR) 53
Liver, insulin effect (THEIS) 75
— tissue. II (THEIS) 75
Lipochromes:
III (CONNOR) 619
Lipoid:
Phosphorus in blood, colorimetric determination (HARNES) 405
Liver:
Lipid. II (THEIS) 75
—, insulin effect (THEIS) 75
Pernicious anemia. II (COHN, MINOT, ALLES, and SALTER) 325

M

Metabolism:
Amino acid (LUCK) 13
Bile. I (ALDRICH and BLEDSOE) 519
Embryonic. I (CALVERY) 489
—. II (CALVERY) 497
Nitrogen, and muscular exercise (CHAMBERS and MILHORAT) 603
Protein, insulin effect (MILHORAT and CHAMBERS) 595
Sulfur, urine of fasting dogs (MORGULIS) 627
Methemoglobin:
Hydrogen ion activity determinations by hydrogen electrode in systems containing (STADIE and HAWES) 241
Solutions at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265
Methylglyoxal:
Formation from hexose phosphate in presence of tissues (ARIYAMA) 395
Methyl xanthine:
Uric acid excretion, influence (MYERS and WARDELL) 697
Muscle:
Anesthesia effect on recovery process in mammalian skeletal (LONG) 563

Muscle—*continued:*
Exercise and nitrogen metabolism (CHAMBERS and MILHORAT) 603
Phosphorus, labile (IRVING and WELLS) 97
Skeletal, mammalian, anesthesia effect on recovery process (LONG) 563

N

Nitric oxide:
Hemoglobin solutions at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265

Nitrogen:
Amino acid, animal tissues, estimation (KIECH and LUCK) 723
— —, — —, estimation (LUCK) 1
Elimination following amino acids administered intravenously (WILHELMJ and BOLLMAN) 127
Metabolism and muscular exercise (CHAMBERS and MILHORAT) 603

Nucleic acid:
Hexose, chicken embryo (CALVERY) 497

Nucleotide:
Pentose, chicken embryos (CALVERY) 489

Nutrition:
Iron. V (WADDELL, STEENBOCK, ELVEJHEM, and HART) 769

Nutrition—*continued:*
Iron. VI (WADDELL, ELVEHJEM, STEENBOCK, and HART) 777
—. VII (HART, STEENBOCK, WADDELL, and ELVEHJEM) 797

O

Oxidation:
Aliphatic acids, phenyl-substituted, conjugation of benzoic and phenylacetic acids formed as end-products of (QUICK) 581
Beta-, quantitative. I (QUICK) 581
Glucose, borate effect (LEVY and DOISY) 733
Gossypol (CLARK) 81
Phenyl-substituted aliphatic acids, conjugation of benzoic and phenylacetic acids formed as end-products of (QUICK) 581
Sugars, borate effect (LEVY and DOISY) 733

Oxygen:
-combining properties of blood. III (STADIE and HAWES) 241
— — — —. IV (STADIE and HAWES) 265
— — — —. V (STADIE) 303
Respiration apparatus for determination in indirect calorimetry (MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER) 413

P

Parathyroidectomy:
Plasma calcium (REED) 547
Penicillium:
luteum-purpurogenum group, gluconic acid production. II (HERRICK and MAY) 185
Pentose:
Nucleotides, chicken embryos (CALVERY) 489
Pettenkofer:
Bile acids in blood, quantitative determination (ALDRICH and BLEDSOE) 519
Phenyl:
-substituted aliphatic acids, conjugation of benzoic and phenylacetic acids formed as end-products of oxidation (QUICK) 581
Phenylacetic acid:
Conjugation, formed as end-product from oxidation of phenyl-substituted aliphatic acids (QUICK) 581
Phosphate:
Hexose, methylglyoxal formation from, in presence of tissues (ARIYAMA) 395
Phosphorus:
Labile, muscle (IRVING and WELLS) 97
Lipoid, blood, colorimetric determination (HARNES) 405
Physiology:
Animal, aluminum compounds (MCCOLLUM, RASK, and BECKER) 753
Physiology—*continued:*
Plant, aluminum compounds (MCCOLLUM, RASK, and BECKER) 753
Sexual, inadequate vitamin A, effect (EVANS) 651
Vitamin A, inadequate, effect on sexual (EVANS) 651
Picric acid:
Compound of creatinine, sodium hydroxide, and (GREENWALD) 539
Plant:
Physiology, aluminum compounds (MCCOLLUM, RASK, and BECKER) 753
Plasma:
Blood, lipid, determination of small amounts (BLOOR) 53
Calcium, parathyroidectomized dogs (REED) 547
Titrimetric quinhydrone and hydrogen electrodes, comparison in hydrion concentration determinations (MEEKER and REINHOLD) 505
Polarization:
Light, and starch hydrolysis (BUNKER and ANDERSON) 473
Polymerization:
II (LEVENE and WALTI) 685
Potassium:
Kramer-Tisdall method (MORGULIS and PERLEY) 647
Potassium acetate:
Epichlorohydrin, products of interreaction (LEVENE and WALTI) 685

Protein:
Blood, respiratory. III (REDFIELD and MASON) 451
Metabolism, insulin effect (MILHORAT and CHAMBERS) 595
Respiratory, blood. III (REDFIELD and MASON) 451

Q

Quinhydrone:
Electrodes, titrimetric (MEEKER and REINHOLD) 505

R

Reduction:
Blood of fish, reducing substances (WHITE) 655
Respiration:
Apparatus for oxygen and carbon dioxide determination in indirect calorimetry (MCCLENDON, ANDERSON, STEGGERDA, CONKLIN, and WHITAKER) 413
Blood, protein. III (REDFIELD and MASON) 451
Protein, blood. III (REDFIELD and MASON) 451

S

Salt(s):
Iron, anemia correction (WADDELL, ELVEHJEM, STEENBOCK, and HART) 777
—, toxic effect of gossypol counteracted by (GALLUP) 437
Sex:
Physiology of female, inadequate vitamin A, effect (EVANS) 651
Sodium:
Growth on ration containing small amounts of (ST. JOHN) 27
Synthetic ration containing small amounts of, growth (ST. JOHN) 27
Sodium benzoate:
Hippuric acid elimination after ingestion (DIACK and LEWIS) 89
Sodium chloride:
Bicarbonate-, hemoglobin systems, Debye-Hückel theory of ionic interaction (STADIE) 303
Sodium hydroxide:
Compound of creatinine, picric acid, and (GREENWALD) 539
Solution:
Cyanhemoglobin, at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265
Hemoglobin, at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265
Methemoglobin, at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265

Solution—*continued:*
Nitric oxide hemoglobin, at varying ionic strengths, apparent first dissociation constant of carbonic acid and activity coefficient of bicarbonate ion (STADIE and HAWES) 265
Specific dynamic action:
Amino acids intravenously administered (WILHELMJ and BOLLMAN) 127
Starch:
Hydrolysis and polarized light (BUNKER and ANDERSON) 473
Succinic acid:
Benzyl esters, hippuric acid elimination after ingestion (DIACK and LEWIS) 89
Sugar:
Blood, insulin intraperitoneally injected, effect (SAHYUN and BLATHERWICK) 459
—, method (FOLIN) 421
Oxidation, borate effect (LEVY and DOISY) 733
Sulfur:
Metabolism, urine of fasting dogs (MORGULIS) 627
Partition, urine of fasting dogs (MORGULIS) 627
Synthalin:
Glukhorment, similarity (BISCHOFF, BLATHERWICK, and SAHYUN) 467

T

Temperature:
Catalase reaction. VI (MORGULIS and BEBER) 115
Tissue:
Animal, amino acid nitrogen estimation (KIECH and LUCK) 723
—, — — — estimation (LUCK) 1
—, urea estimation (KIECH and LUCK) 723
Carotin, quantitative estimation (CONNOR) 619
Liver, lipid distribution. II (THEIS) 75
Methylglyoxal formation from hexose phosphate in presence of (ARIYAMA) 395
Titration:
Quinhydrone electrodes (MEEKER and REINHOLD) 505
Toxicity:
Gossypol, iron salts in counteracting (GALLUP) 437
Tribolium confusum Duval:
Vitamin requirements (SWEETMAN and PALMER) 33

U

Urea:
Animal tissues, estimation (KIECH and LUCK) 723
Uric acid:
Excretion, methyl xanthine influence (MYERS and WARDELL) 697

Urine:
Sulfur metabolism, fasting dogs (MORGULIS) 627
— partition, fasting dogs (MORGULIS) 627

V

Vitamin(s):
A, inadequate, effect on sexual physiology of female (EVANS) 651
Vitam in(s)—*continued:*
B, differentiation between antineuritic and growth-promoting (EVANS and BURR) 231
Flour beetle (*Tribolium confusum* Duval), requirements (SWEETMAN and PALMER) 33
Insects as test animals. I (SWEETMAN and PALMER) 33

ST. LOUIS FEB 15 1929